

## Geriatric Assessment in Advanced Kidney Disease

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CJASN 14: 1091–1093, 2019. doi: <https://doi.org/10.2215/CJN.14771218>

The dialysis population is aging. Older patients with ESKD are more likely to be multimorbid and have a high burden of aging-related health and social care problems, a greater likelihood of developing the frailty syndrome requiring social support within a few months of starting dialysis, and a high mortality rate. In a recent Dutch study of geriatric assessment in 196 patients aged  $\geq 65$  years old starting dialysis, 77% had two or more geriatric impairments, with only 12 patients considered to have none (1). Over 50% of patients were considered to be frail; almost 80% required help with at least one instrumental activity of daily living; and 67% had a cognitive deficit, most commonly clock drawing (50%). Falls are also common in older patients on dialysis; in the Frail Elderly Patient Outcomes on Dialysis (FEPOD) study, 33% of patients had fallen in the previous 6 months (2).

As well as being associated with survival, frailty has a major effect on quality of life. In FEPOD, frailty was associated with worse SF-12 physical and mental component scores, higher symptom burden, higher illness intrusion, and higher depression scores (1). However, we need to move on from merely recording the presence of geriatric impairments to actually attempting to address them. The European Renal Best Practice recommended “a simple score be used on a regular basis to assess functional status in older patients with CKD stage 3b–5d with the intention to identify those who would benefit from a more in-depth geriatric assessment and rehabilitation program” (3). The International Society of Peritoneal Dialysis expert opinion stated that “geriatric assessment is critical in establishing what possible barriers are present that may affect successful PD and establishing a care plan to promote maximal functionality” (4). Hence it is increasingly recognized that a more systematic approach is required for the assessment and management of older patients with advanced kidney disease.

Such an approach is embodied in the Comprehensive Geriatric Assessment (CGA). The CGA describes a model of care on the basis of a multidimensional, multidisciplinary assessment that identifies medical, psychosocial, functional, and environmental needs, and informs development of an integrated/coordinated care plan (Figure 1) (5,6). Most evidence for its effectiveness comes from acute hospital settings. Inpatient-based assessments have demonstrated reductions in length of stay, mortality, readmission rates and costs (5). Emergency department assessments may reduce acute admissions and increase referrals to palliative and

hospice care (5). Use in preoperative protocols is associated with better outcomes, particularly after hip fracture (6). Its role in chronic disease settings is less well established. There are reports of its use in advanced kidney disease (7,8), where it has the potential to inform shared decision-making about modality choice and maximize opportunities for rehabilitation and maintenance of independence, which are known priorities for patients with advanced CKD (9). Use of the CGA can also ensure better coordination of management for multimorbid conditions and, where appropriate, enable smooth transition into palliative modes of care. Indeed, it has been suggested that the CGA should be carried out and a care plan produced at the time of dialysis initiation and at any major change in a patient’s health or functional status, such as a hospitalization (7).

If the CGA is to play a significant role in these settings, there are barriers to be overcome. The number of people living with advanced CKD is increasing with mounting demands on services. The appropriateness of many clinical practice guidelines and pathways for older, frailer, multimorbid patients is questionable. We require pathways that are fit to meet current and future needs, and a workforce with the appropriate skills. Most nephrologists recognize the importance of geriatric conditions in patients with CKD and those on dialysis, but their knowledge and use of geriatric tools is often sparse.

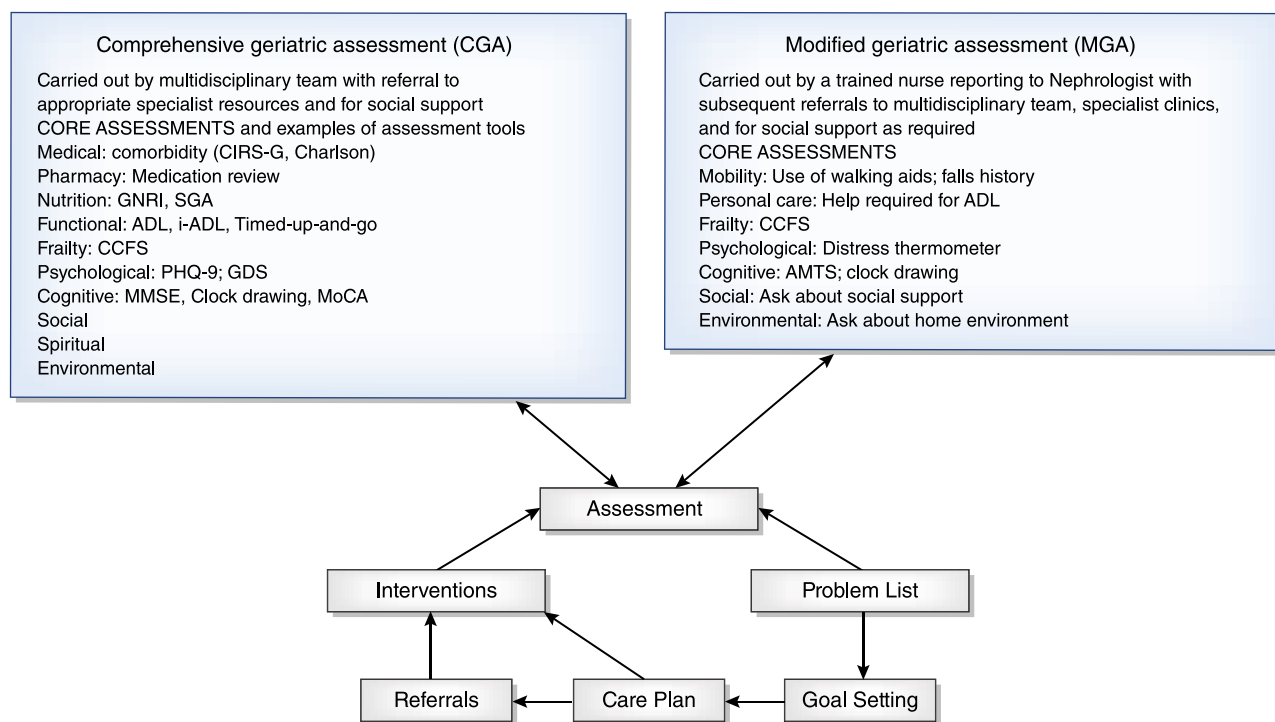
Ignoring the health care and social challenges of the aging dialysis population leads to poor patient experience and outcomes, and inappropriate use of expensive health care resources, which are limited in all countries, however wealthy. We need to evolve cost-effective models of care allowing integration of geriatric and nephrological care. This may require adaptation of the process of the CGA. The full CGA, defined by the recent Cochrane review as a multidimensional, interdisciplinary diagnostic process (6), is time consuming and labor intensive. This is a deterrent to both the dialysis provider and to patients, who already have a high health care burden.

Recognizing these barriers, E.A.B. has carried out a feasibility project to determine whether a nephrology nurse could deliver a modified geriatric assessment (MGA) followed by referral to the appropriate support service(s). Preliminary results were presented at a symposium on kidney disease in older people at the Royal Society of Medicine (London, UK) (10). The MGA includes assessment of dependence on mobility aids, falls, presence of vision or hearing problems,

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**Figure 1. | Schematic representation of core elements of geriatric assessment.** Examples of assessments used for the CGA and the actual assessments used for the MGA are given. Arrows show how the assessment cycle is repetitive. ADL, activities of daily living; AMTS, Abbreviated Mental Test Score (ten items); CCFS, Canadian Study of Health and Aging Clinical Frailty Scale; CIRS-G, Cumulative Illness Rating Scale-Geriatrics; GDS, Geriatric Depression Scale; GNRI, Geriatric Nutritional Risk Index; i-ADL, instrumental activities of daily living; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; PHQ-9, Patient Health Questionnaire 9; SGA, Subjective Global Assessment.

and social support provided by family or other caregivers, as well as assessment of frailty and cognitive dysfunction (Figure 1). The assessment takes up to an hour, and so could be completed while waiting for hemodialysis (HD) or in a peritoneal dialysis (PD) clinic either as a whole or in smaller components on separate occasions. All patients aged  $\geq 70$  years old or considered as frail, on PD or on HD in one center were assessed (50 on PD, 68 on HD). Thirty five percent of patients scored 5 (mild frailty) and 35% scored 6 (moderate frailty) on the Canadian Frailty Scale. Services to which patients were referred after assessment included dietician (42%), social services (30%), kidney disease counselor (18%), palliative care (9%), memory clinic (12%), and falls clinic (8%). All patients completed a distress thermometer score (a validated score used in oncology and in some UK nephrology units, with an optimal cut-off point score of 3) and the renal treatment satisfaction score (validated and used in the FEPOD study [1]). These showed improvement in patient experience over a 12-month period. At initial assessment, 32% of patients on HD ( $n=40$ ) and 31% of patients on PD ( $n=31$ ) had a distress thermometer score  $\geq 4$ ; at 12 months this had fallen to 12% for patients on HD and 16% for patients on PD. The Renal Treatment Satisfaction score was analyzed with an optimal cut-off score of 80%; 46% of patients on HD and 16% of patients on PD scored  $< 80\%$  at initial assessment compared with 20% of patients on HD and 0% of patients on PD at 12 months.

These initial results are encouraging and show that geriatric assessment can be integrated into routine dialysis

care using the existing nephrology multidisciplinary team. The next phase of the project is to develop an education program for kidney nurses so that the MGA can be incorporated into routine care across the whole department, to include all dialysis areas as well as predialysis assessment, transplantation, *etc.* Further evaluation will also be needed to determine the effect on meaningful outcomes such as length of stay during hospital admissions and admission to residential care, and kidney-specific outcomes, such as decisions about dialysis intensity; starting, continuing, or stopping dialysis; and prospects for transplantation.

There is now considerable data about the burden of geriatric syndromes for older people with advanced kidney disease. Nephrology teams will have to develop ways of incorporating geriatric assessment and care into routine management. How they do this will depend on local health care systems, expertise, and resources.

#### Acknowledgements

Dr. Brown received funding from Imperial Health Charity and Kidney Care UK.

The content of this article does not reflect the views or opinions of the American Society of Nephrology (ASN) or CJASN. Responsibility for the information and views expressed therein lies entirely with the author(s).

#### Disclosures

None.

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Published online ahead of print. Publication date available at [www.cjasn.org](http://www.cjasn.org).